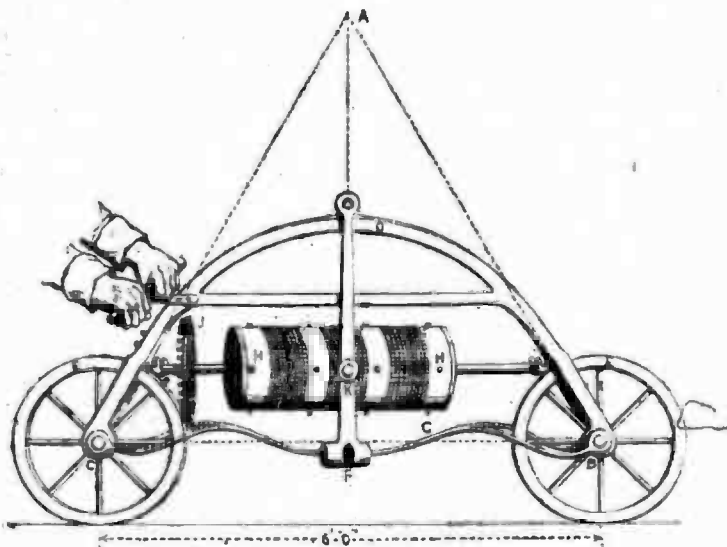


DENTON'S SELF-RECORDING LEVEL.



Scale, 2 feet to the inch.

DENTON'S SELF-RECORDING LEVEL.

HAVING read in your journal of the 27th ult. a paragraph mentioning the invention, by a person in Philadelphia, of a machine for measuring mechanically altitudes, depressions, and spaces at the rate of 15 miles a-day, I am led to ask you to give space for a drawing and description of an instrument designed by me to perform some of the objects ascribed to the American invention, in the hope that if there be any credit due to the design, it may be secured before I can be accused of plagiarism.

My purpose in designing the instrument I now make public, was to put into the hands of the uneducated but careful foreman of sewerage and drainage works, an instrument by which he could transmit to his absent principal, infallible proof of the due execution of conduit work, in which proper inclination to the outfall is the first desideratum.

The principle upon which the level is designed is the same as I had previously carried into practice in the A level, but is here improved by the adoption of detail, by which it is made the means of recording its own operations by drawing, on sectionally-ruled paper fixed to a revolving drum, a line indicating the gradients or inclinations of the surface over which it is made to perambulate; thus enabling the draughtsman to plot a section without the aid of figures, and the engineer and contractor to calculate earthwork for drains and sewers without any section but that supplied by the instrument itself.

The use of the level may be advantageously applied to the laying of rails, and other works requiring precisely-graded inclinations; but as to the possibility of doing 15 miles a-day, with any degree of accuracy, I think it will be found an American exaggeration.

J. BAILLY DENTON.

Description of the instrument as drawn in the accompanying sketch.

D—The frame of the level, the shape of which is governed by the figure of an isosceles triangle (A B C), the properties of which must be preserved.

E—Wheels by which the level is propelled: the circumference of each wheel is equal to the length of the base of the triangle, i.e., the circumference of the wheel E is equal to the distance from C to B, and each revolution of the wheel covers the ground spanned by the instrument.

F—Pendulum or plumb-line, which, when the instrument stands upon level ground, cuts the triangle directly in half, but when either of the legs (wheels) is raised above the other, gravitates towards the lower side, and thus

indicates, by the difference between the centre of the triangle and its pendent position, the hypotenusal elevation above the horizontal base.

G—Arc upon which the pendulum (radius) travels.

H—Revolving drum upon which sectionally-ruled paper is fixed in true vertical position, and which is put in motion by the wheel J. The drum may be shifted vertically to accord with any prescribed scale, or laterally to avoid removal of the paper.

J—Wheel placed vertically (tangent to the wheel E), and moved by rack work at each revolution of the wheel E a given proportion of its own circumference, so as to record, in the corresponding movement of the drum, the distance perambulated by the instrument.

K—Pencil or tracer, which marks on the paper the action of the pendulum, i.e., difference in the height of the ground or base spanned by the instrument.

FROM VIENNA.

I ALWAYS repeat and return to an old theme, viz., that architecture is the most tangible exponent of the social life of humanity. Show me the house, the abode of a man, and I will tell you who and what he is. I cannot speak with great praise of the buildings and dwellings of this capital, which I had not visited for the last fifteen years. A great change, certainly, has taken place, which, however, I cannot approve of. Over the whole town, but especially in the inner city, numbers of the houses of the smaller *burghesses* have disappeared, and huge piles are erected in their stead. These houses, or rather fortresses, bear no analogy to any structure existing in London. Imagine a building four or five stories high, with a frontage of ten or fifteen, nay, twenty and forty windows,—as, for instance, the great National Inn, in the Leopoldstadt. For an inn, such an erection may do better, although even then fraught with much inconvenience. But how is it, if applied to private dwellings, when it will happen that twenty families and their visitors will have to pass the same staircase? Where is then the privacy, I would fain say the sanctity, of a respectable English household? Such a house resembles, day and night, a beehive, and as the houses are quite open, none can boast of a home, but rather consider himself lodged in a market-place.

I may recur to the other effects of such huge private houses, which, if Government had foreseen them, it surely had not fostered, but, with proper management, checked their undue increase. The increase of public monuments

has not been extensive of late, but some good specimens have been put up. Amongst the first I place the beautiful fountain on the *Treyung*, a rather small and irregular cross-way of several streets; but the tactful sculptor has known what fits best this locality. The monument consists of a rather short column of considerable dimensions, round which four stems of oak trees (a ticklish subject for sculpture) are placed, which, however, the artist has managed exceedingly cleverly, the branches and foliage forming a sort of canopy, made in the Gothic style. Round this structure of fine white freestone are four figures of brass, of about natural size, representing some German river deities, two male and two female. The whole is surmounted by a figure resembling Minerva.

I must add, that the artist has thought of every trifle, and made of a variety of clever trifles (if such term may be used) a beautiful whole. The base of the monument—the part whence the four streams of water issue—is in the shape of a rock: this representation of an object of inanimate nature is also exceedingly well managed. And even the water itself has been made instrumental in increasing the picturesqueness of this work of art. The streams deflux at a considerable height from the ground, and, being of a breadth of about 3 inches, issuing forth in a bent shape, they appear at a distance like ribbons of crystal, to which the purity of the fluid, or their arcuated shape, may contribute. The water finally flows through a beautiful basin, made of polished greyish granite, which reminds one of the huge sarcophagi of old Egypt.

Another lately erected monument is that of the late Emperor, in the square of the palace. It has met with much obloquy, even in an artistic point of view, on account of its heavy character, &c. I do not find this criticism founded in fact, but think it a structure which may vie with the best of mediæval themselves, except the statue of the Emperor, which, of course, has become now an anachronism. The surrounding four colossal brass figures are respectable, nay, ideal figures, albeit, not in the bold style of Michelangelo. Here also the polished surfaces of the fine Bavarian granite, richly chased with brass, add to the cleanliness and elegance of the structure. A very showy recent building is the county gaol and house of correction.

Most of your readers will know that the city of Vienna is a fortress, surrounded by a spacious esplanade, beyond which the suburbs extend in a circular shape. It is clear at first sight, that such a disposition is unfavourable to architectural improvement, as the latter partake always of a character of inferiority. There was many years back a plan started to pull down the bulky walls of the ramparts, and to unite the city by huge streets with the present suburbs, leaving, as in Paris, room for boulevards on the largest scale. This, however, will never be done under the present juncture of affairs. If we come to know further, that there are no omnibuses in Vienna, not even cabs, but merely some very expensive *faeries*,—that with the exception of the city, no gas is yet in use, and this but in a few shops,—Vienna can hardly range but in the second class of the metropolises of Europe, and waits like many things of greater import, the expansion of a new time.

J. L.

THE ROYAL ACADEMY EXHIBITION.

FROM the ability displayed by Mr. G. F. Watts on more than one occasion, in the competitive exhibitions in Westminster-hall, superior emanations might reasonably have been expected from him than are found in this exhibition: his academic knowledge and high feeling have been made evident. (406) "The good Samaritan" falls far short of his usual excellence: although painted expressly to idealize a portrait, there is no obvious obstacle to a less true embodiment of the exquisite parable. (257) "Miss Virginia Pattie," a portrait, individualized by severe classical treatment, is more attractive by its eccentricity than as a production of genius.

(411) "The last Man," J. Martin: a lofty notion, conceived with that perceptive faculty,

* Continued from p. 248, *over*.